

PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) 8540G-000210/US	
		Application Number 10/717,356-Conf. #7713	Filed November 19, 2003
		First Named Inventor Ralph Hobmeyr	
		Art Unit 1795	Examiner M. M. Wills
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 60%;"> <p><input type="checkbox"/> applicant /inventor.</p> <p><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)</p> <p><input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>38,543</u></p> <p><input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____</p> </div> <div style="width: 35%; text-align: center;"> <p>_____ /Ryan W. Massey/ Signature</p> <p>_____ Ryan W. Massey Typed or printed name</p> <p>_____ (248) 641-1258 Telephone number</p> <p>_____ November 18, 2009 Date</p> </div> </div> <p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.</p>			
<input type="checkbox"/> *Total of <u>1</u> forms are submitted.			

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/717,356
Filing Date: November 19, 2003
Applicant: Ralph Hobmeyr
Group Art Unit: 1795
Examiner: Monique M. Wills
Title: VEHICLE PLUMBING TO RELEASE HYDROGEN
FROM FLUID
Attorney Docket: 8540G-000210 (GP-303503)

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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Applicant requests a Pre-Appeal Brief Conference in response to the Final Office Action mailed August 18, 2009 because Applicant believes that a hydrogen-permeable conduit in fluid communication with coolant passages to remove hydrogen from coolant, as recited in claim 1, is fundamentally different from a hydrogen-permeable conduit in fluid communication with fuel passages to supply hydrogen separated from feed gases.

SECTION 103 REJECTIONS

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,919,062 ("Vasileiadis") in view of U.S. Pat. Pub. No. 2004/0157099 ("Kato") and further in view of U.S. Pat. Pub. No. 2003/0159354 ("Edlund"). This rejection is respectfully traversed.

Applicant submits that the cited prior art references do not render obvious claim 1 because the references fail to teach or suggest a "fuel cell system . . . comprising: a fuel cell stack including a plurality of proton exchange membranes . . . and a plurality of coolant passages extending between adjacent ones of said plurality of proton exchange membranes; and a conduit in fluid communication with said coolant passages . . . and comprising a first layer of hydrogen-permeable material," as recited in claim 1.

Vasileiadis discloses feed gases and steam flowing through a permreactor-separator, yielding a hydrogen-based gas that can be supplied to an anode side of a fuel cell stack (Abstract, FIG. 11). Vasileiadis further discloses the permreactor-separator comprising a hydrogen-permeable tube (Col. 3, Line 63 – Col. 4, Line 9). As the Examiner acknowledges, Vasileiadis does not disclose that the hydrogen-permeable tube is in fluid communication with coolant passages extending between proton exchange membranes of a fuel cell. Thus, Vasileiadis does not teach or suggest a hydrogen-permeable conduit in fluid communication with coolant passages, as claimed.

Kato discloses coolant passages 32a, 32b between membrane electrode assemblies 22 in a fuel cell 12 (FIG. 2). The Examiner cites Kato for teaching that it is well known to employ coolant passages between membranes of fuel cells. The Examiner asserts that it would have been obvious to employ the cooling arrangement of Kato in the fuel cell of Vasileiadis in order to control stack temperature and reactivity between the fuel cells. However, Kato does not teach or suggest a hydrogen-permeable conduit in fluid communication with coolant passages, as claimed.

Edlund discloses a steam reformer 12 that separates a hydrogen stream from a vapor feedstock to provide hydrogen to a fuel cell 16 and that includes a membrane

tube 54 (Para. [0033], Lines 4-5; Para. [0034], Lines 1-11; Para. [0040], Lines 1-7; FIGS. 1 and 2). Edlund further discloses that the membrane tube 54 may be composed of hydrogen-permeable materials (Para. [0043], Lines 4-7). The Examiner cites Edlund for teaching that it is well known to employ hydrogen-permeable tubes in fuel cell stacks. The Examiner asserts that it would have been obvious to employ the tube of Edlund in the fuel cell of Vasileiadis in order to separate products in the vicinity of the membrane tube. However, Edlund does not teach or suggest a hydrogen-permeable conduit in fluid communication with coolant passages, as claimed.

Thus, none of the references teach or suggest a hydrogen-permeable conduit in fluid communication with coolant passages, as claimed. It is a longstanding rule that to establish a prima facie case of obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 143 (CCPA 1974). See MPEP § 2143.03. For at least the above reasons, Applicant respectfully asserts that claim 1 defines over the cited art.

Nonetheless, the Examiner asserts that Vasileiadis discloses a hydrogen-permeable tube in fluid communication with coolant passages extending between membranes of a fuel cell because fuel passages and coolant passages are both located between a proton exchange membrane and electrodes. The Examiner also asserts that the permreactor-separator of Vasileiadis satisfies the instant claims because the fuel from the permreactor will be charged to fuel passages located between the membrane and the electrodes in order for the fuel cell to function. The Examiner further asserts that the conduit is in fluid communication with the passages by providing fuel to the cell.

At the outset, Applicant notes that Vasileiadis does not explicitly disclose that the permreactor-separator is in fluid communication with fuel passages extending between proton exchange membranes. Rather, as discussed above, Vasileiadis discloses that the permreactor-separator is in fluid communication with the anode side of a fuel cell stack. However, even if Vasileiadis were to disclose that the permreactor-separator is in fluid communication with fuel passages extending between proton exchange membranes, Applicant maintains that Vasileiadis does not teach or suggest a hydrogen-permeable conduit in fluid communication with coolant passages extending between proton exchange membranes, as claimed.

Applicant notes that Vasileiadis, as well as Edlund, must be considered in their entirety, i.e., as a whole, including portions that would lead away from the claimed fuel cell system. "A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). See MPEP 2141.03.

As discussed above, Vasileiadis and Edlund disclose passing steam and feed gases through a hydrogen-permeable tube to separate hydrogen for use in a fuel cell. Modifying the fuel cell systems of Vasileiadis and Edlund by placing the disclosed hydrogen-permeable tubes in fluid communication with coolant passages would ignore the portions of Vasileiadis and Edlund that lead away from the claimed fuel cell system. More specifically, modifying the fuel cell systems of Vasileiadis and Edlund in this manner would ignore the portions of Vasileiadis and Edlund which teach that hydrogen-permeable tubes are for separating hydrogen from feed gases for use in a fuel cell.

In addition, Applicant submits that the cited prior art references do not render obvious claim 3 because the references fail to teach or suggest a "support layer" that is "breathable to enable passage of said hydrogen to atmosphere," as recited in claim 3.

Vasileiadis discloses a next inner membrane tube (1) through which hydrogen permeates (Col. 6, Lines 16-21; FIG. 1). Vasileiadis further discloses a far outer impermeable tube/shell (7) that prevents passage of hydrogen to atmosphere (FIG. 1). The Examiner asserts that in disclosing the hydrogen-permeable next inner membrane tube (1), Vasileiadis discloses a support layer that is breathable. However, the Examiner does not address the remainder of the limitation, which recites that the support layer is breathable "to enable passage of said hydrogen to atmosphere."

Furthermore, Applicant reiterates that modifying the permreactor-separator of Vasileiadis to include a support layer that is breathable to enable passage of hydrogen to the atmosphere would render the permreactor-separator unsatisfactory for its intended purpose of capturing hydrogen for use in a fuel cell. "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). See MPEP 2143.01.

Respectfully submitted,

Dated: November 18, 2009

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